SONY KV-2670

MODEL

SERVICE MANUAL

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WARNING !!

AN ISOLATION TRANSFORMER SHOULD BE USED DURING ANY SERVICE TO AVOID POSSIBLE SHOCK HAZARD, BECAUSE OF LIVE CHASSIS.
THE CHASSIS OF THIS RECEIVER IS DIRECTLY CONNECTED TO THE AC POWER LINE.

SAFETY-RELATED COMPONENT WARNING !!

COMPONENTS IDENTIFIED BY SHADING AND MARK ⚠ ON THE SCHEMATIC DIAGRAMS, EXPLODED VIEWS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY. CIRCUIT ADJUSTMENTS THAT ARE CRITICAL TO SAFE OPERATION ARE IDENTIFIED IN THIS MANUAL. FOLLOW THESE PROCEDURES WHENEVER CRITICAL COMPONENTS ARE REPLACED OR IMPROPER OPERATION IS SUSPECTED.

ATTENTION!!

AFIN D'EVITER TOUT RISQUE D'ELECTROCUTION PROVENANT D'UN CHÂSSIS SOUS TENSION, UN TRANSFORMATEUR D'ISOLEMENT DOIT ETRE UTILISÉ LORS DE TOUT DÉPANNAGE.
LE CHÂSSIS DE CE RÉCEPTEUR EST DIRECTEMENT RACCORDÉ À L'ALIMENTATION SECTEUR.

ATTENTION AUX COMPOSANTS RELATIFS À LA SÉCURITÉ!!

LES COMPOSANTS IDENTIFIÈS PAR UNE TRAME ET PAR UNE MARQUE ⚠ SUR LES SCHÉMAS DE PRINCIPE, LES VUES EXPLOSÉES ET LES LISTES DE PIECES SONT D'UNE IMPORTANCE CRITIQUE POUR LA SÉCURITÉ DU FONCTIONNEMENT. NE LES REMPLACER QUE PAR DES COMPOSANTS SONY DONT LE NUMÉRO DE PIÉCE EST INDIQUÉ DANS LE PRÉSENT MANUEL OU DANS DES SUPPLÉMENTS PUBLIÉS PAR SONY. LES RÉGLAGES DE CIRCUIT DONT L'IMPORTANCE EST CRITIQUE POUR LA SÉCURITÉ DU FONCTIONNEMENT SONT IDENTIFIES DANS LE PRÉSENT MANUEL. SUIVRE CES PROCÉDURES LORS DE CHAQUE REMPLACEMENT DE COMPOSANTS CRITIQUES, OU LORSQU'UN MAUVAIS FONCTIONNEMENT EST SUSPECTÉ.

SAFETY CHECK-OUT
(US MODEL ONLY)

After correcting the original service problem, perform the following safety checks before releasing the set to the customer:

1. Check the area of your repair for unsoldered or poorly-soldered connections. Check the entire board surface for solder splashes and bridges.
2. Check the interboard wiring to ensure that no wires are "pinched" or contact high-wattage resistors.
3. Check that all control knobs, shields, covers, ground straps, and mounting hardware have been replaced. Be absolutely certain that you have replaced all the insulators.
4. Look for unauthorized replacement parts, particularly transistors, that were installed during a previous repair. Point them out to the customer and recommend their replacement.
5. Look for parts which, though functioning, show obvious signs of deterioration. Point them out to the customer and recommend their replacement.
6. Check the line cord for cracks and abrasion. Recommend the replacement of any such line cord to the customer.
7. Check the condition of the monopole antenna (if any).
   Make sure the end is not broken off, and has the plastic cap on it. Point out the danger of impalement on a broken antenna to the customer, and recommend the antenna's replacement.
8. Check the B+ and HV to see they are at the values specified. Make sure your instruments are accurate; be suspicious of your HV meter if sets always have low HV.
9. Check the antenna terminals, metal trim, "metallized" knobs, screws, and all other exposed metal parts for AC leakage. Check leakage as described below.

LEAKAGE TEST

The AC leakage from any exposed metal part to earth ground and from all exposed metal parts to any exposed metal part having a return to chassis, must not exceed 0.5 mA (500 microampers). Leakage current can be measured by any one of three methods.

1. A commercial leakage tester, such as the Simpson 229 or RCA WT-540A. Follow the manufacturers' instructions to use these instruments.
2. A battery-operated AC milliammeter. The Data Precision 245 digital multimeter is suitable for this job.
3. Measuring the voltage drop across a resistor by means of a VOM or battery-operated AC voltmeter. The "limit" indication is 0.75 V, so analog meters must have an accurate low-voltage scale. The Simpson 250 and Sanwa SH-63Trd are examples of a passive VOM that is suitable. Nearly all battery operated digital multimeters that have a 2 V AC range are suitable. (See Fig. A)

HOW TO FIND A GOOD EARTH GROUND

A cold-water pipe is guaranteed earth ground; the cover-plate retaining screw on most AC outlet boxes is also at earth ground. If the retaining screw is to be used as your earth-ground, verify that it is at ground by measuring the resistance between it and a cold-water pipe with an ohmmeter. The reading should be zero ohms. If a cold-water pipe is not accessible, connect a 60–100 watts trouble light (not a neon lamp) between the hot side of the receptacle and the retaining screw. Try both slots, if necessary, to locate the hot side of the line, the lamp should light at normal brilliance if the screw is at ground potential. (See Fig. B)

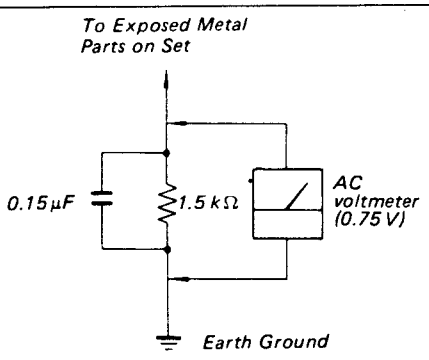


Fig. A. Using an AC voltmeter to check AC leakage.

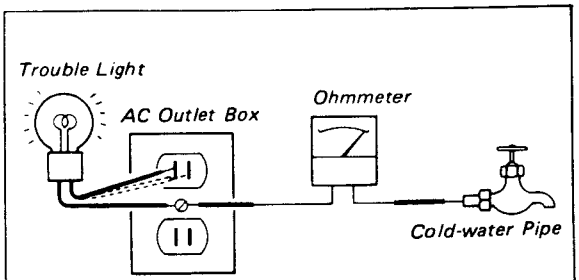
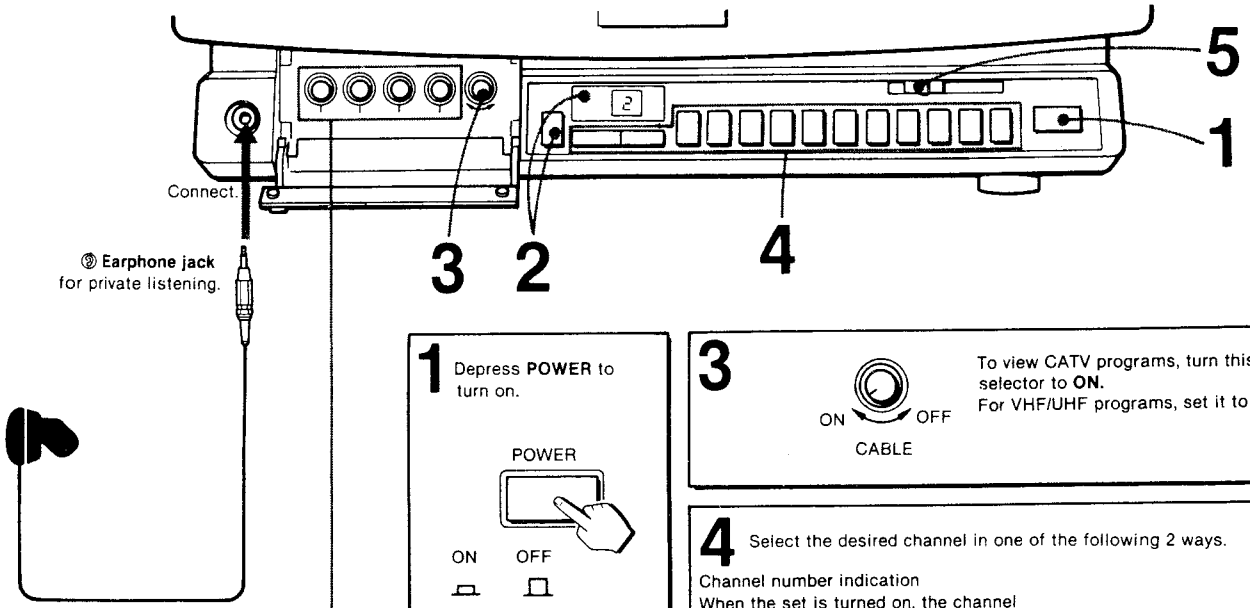


Fig. B. Checking for earth ground.

SECTION 1
GENERAL

1-1. TV OPERATION

For normal TV operation, follow the steps (1 through 5).



1 Depress **POWER** to turn on.

POWER

ON OFF

2

Make sure that indication lamp in the display window is not lit.

If it is lit, press once the TV/VIDEO button.

3

ON OFF

CABLE

To view CATV programs, turn this selector to **ON.**
For VHF/UHF programs, set it to **OFF.**

4 Select the desired channel in one of the following 2 ways.

Channel number indication
When the set is turned on, the channel number " 2 " appears first.

1 2 3 4 5 6 7 8 9 0 ENTER

Press the number(s) of the channel then press ENTER.
or
Press CH " + " for higher-numbered channels and "−" lower-numbered channels.

5 Adjust **VOLUME.**

VOLUME MIN MAX

to decrease to increase

To turn the set off, press **POWER** again.

PICTURE ADJUSTMENTS

If any adjustment is necessary, adjust the appropriate control as described below.

HUE

skin tones become purplish — skin tones become greenish

COLOR

for less color intensity — for more color intensity

BRIGHT

for less brightness — for more brightness

PICTURE

to decrease picture contrast — to increase picture contrast

Cable TV channel chart *

Cable TV systems use letters or numbers to designate channels. To tune in a channel, refer to this chart.

Number on this TV	1	5	6	14	15	16	17
Corresponding CATV channel	A-8	A-7	A-6	A	B	C	D

18	19	20	21	22	23	24	25	26	27	28	29	30
E	F	G	H	I	J	K	L	M	N	O	P	Q

31	32	33	34	35	36	37	38	39	.....	93	94
R	S	T	U	V	W	W+1	W+2	W+3	.....	W+57	W+58

95	96	97	98	99
A-5	A-4	A-3	A-2	A-1

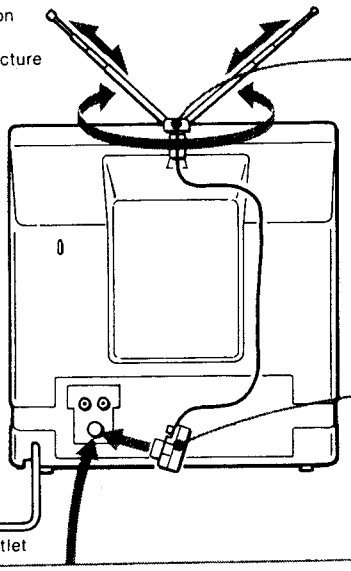
Check with your local cable TV company for more complete information on the available channels.

* The designation of the cable TV channels conforms to the EIA/NCTA recommendation.

INDOOR ANTENNA CONNECTION

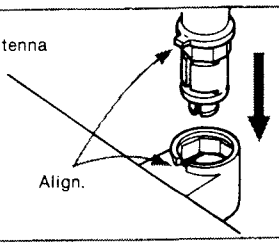
For VHF/UHF reception, use the supplied dipole telescopic antenna.

Adjust the length, direction and angle of both arms symmetrically until the picture is clear.

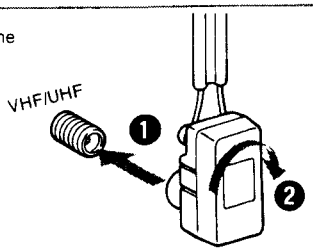


to a wall outlet

1 Insert the projection into the antenna receptacle on the set.



2 Plug the antenna connector into the VHF/UHF antenna terminal.



OUTDOOR ANTENNA/CABLE CONNECTION

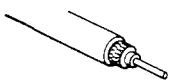
If you cannot obtain satisfactory reception with the dipole antenna, using an outdoor antenna may be necessary.
Cable TV reception is only possible by connecting a cable supplied by your local cable operator.

1 Remove the indoor antenna from the antenna terminal of the TV.
2 Prepare the antenna or cable end using the appropriate connector, and connect the antenna or cable to the antenna terminal of the TV. (See A or B below.)

A Combination VHF/UHF antenna,* VHF antenna, UHF antenna or CATV cable

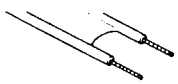
Select the proper connector according to the cable type.

When the cable is a 75-ohm coaxial type (round)

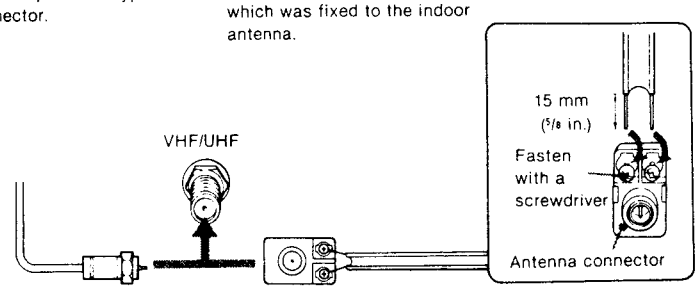


Use an optional F-type connector.

When the cable is a 300-ohm ribbon type lead-in (flat)



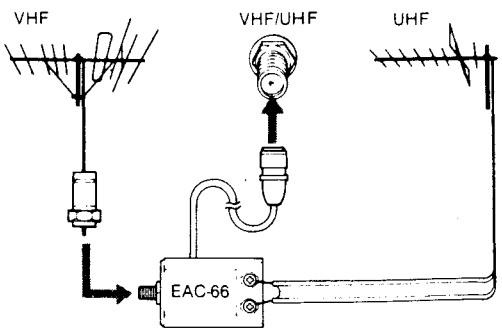
Attach the antenna connector which was fixed to the indoor antenna.



* Most combination antennas are equipped with a signal splitter. Take off the splitter and attach the proper connector.

B When both VHF and UHF antennas are connected

Prepare the VHF antenna end using the appropriate connector as illustrated in A.
Attach an optional EAC-66 U/V mixer to the TV antenna terminal, and connect the cables to the U/V mixer.



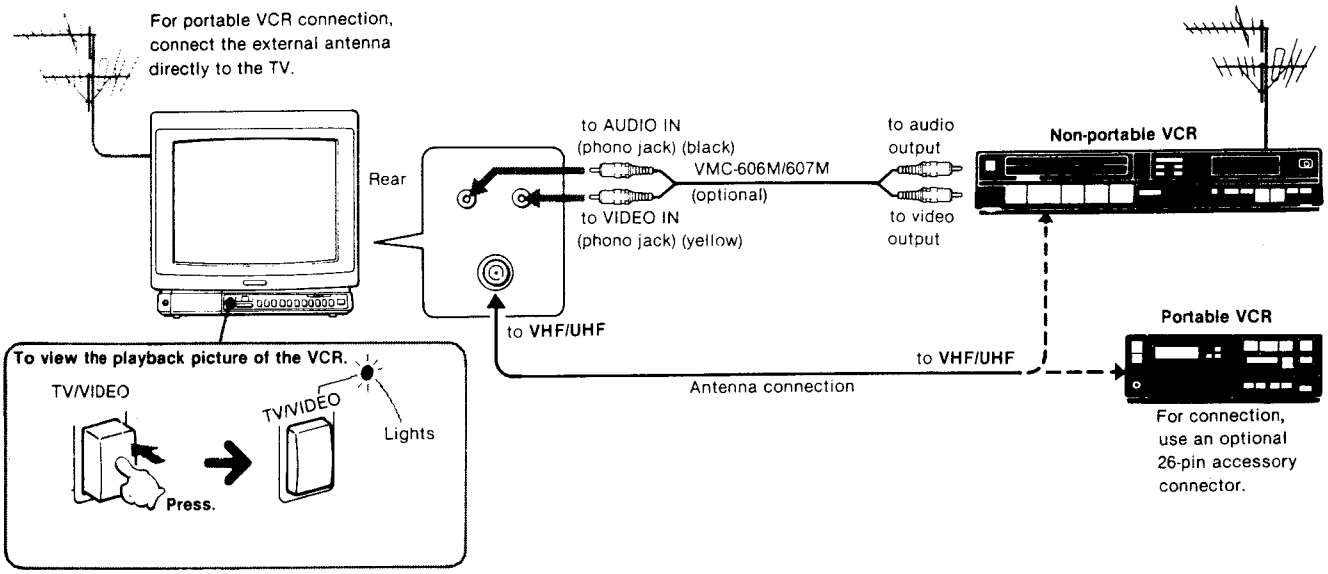
When the cable is connected to the TV with the U/V mixer, snow and noise may appear in the pictures of the cable TV channels over 37 (W + 1).

1-3. AUDIO AND VIDEO INPUT JACKS

You can view the picture generated by equipment connected to the AUDIO IN and VIDEO IN jacks by simply pressing the TV/VIDEO button.

We recommend using the AUDIO IN and VIDEO IN jacks to view VCR programs in better picture quality.

Connection of a VCR

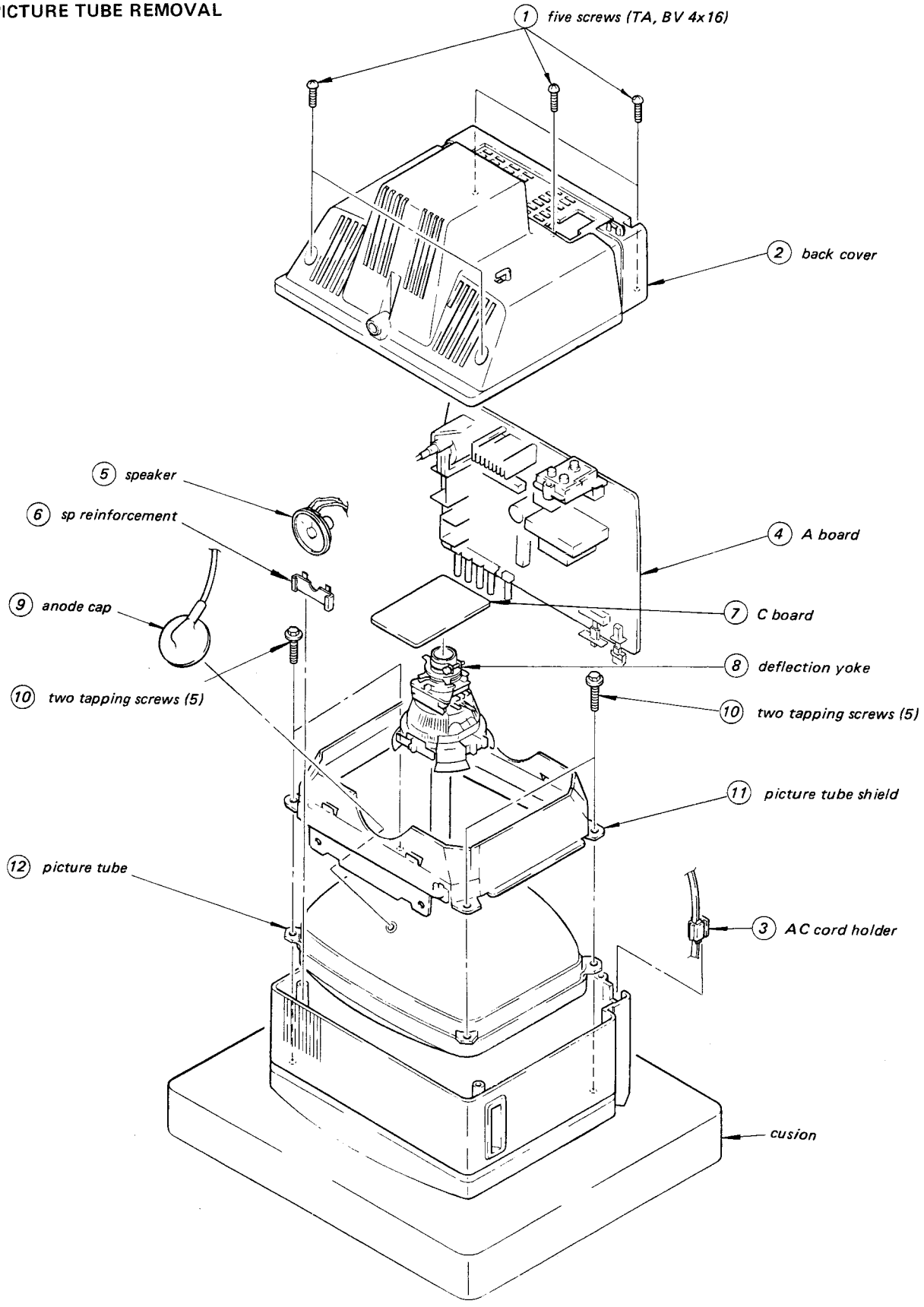


Notes on connections

- Before connecting, make sure that the power to each piece of equipment is turned off.
- For details on connections, refer to the instruction manuals of the equipment to be connected.
- The plugs should be fully inserted into the jacks. A loose connection may cause hum and noise.
- Match the colors of the plugs to that of the jacks.
- Move the VCR away from the TV if the display or sound is affected by the magnets in the TV.

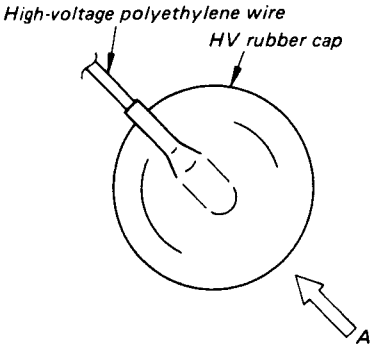
SECTION 2
DISASSEMBLY

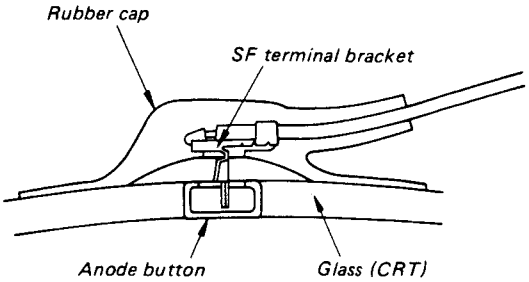
2-1. PICTURE TUBE REMOVAL

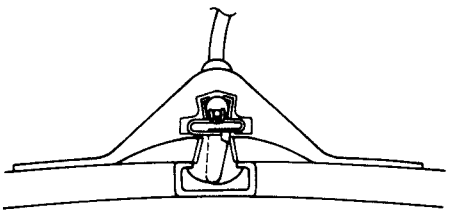


2-2. REMOVAL OF ANODE CAP

- **Anode Cap Structure**

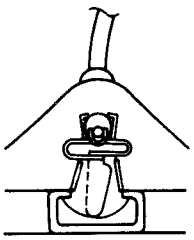




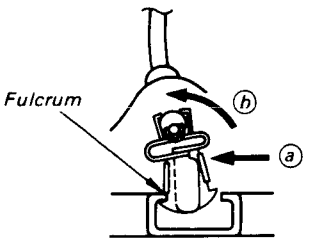


Cross section viewed from the arrow A

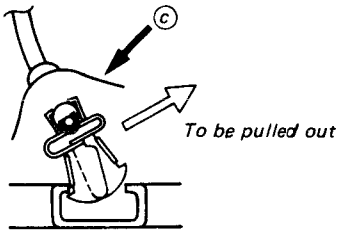
- **Removal of SF Terminal**



Normal inserting position

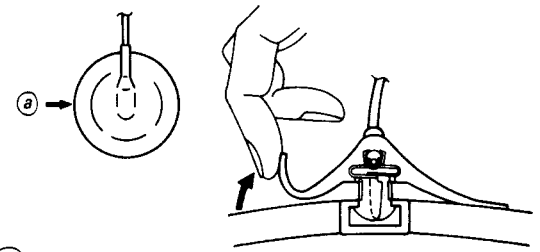


When pushing in the direction indicated by the arrow ⓐ, the SF terminal tilts toward the fulcrum side due to the spring characteristic.
Remove it by pulling up in the direction indicated by the arrow ⓑ with the SF terminal tilted.

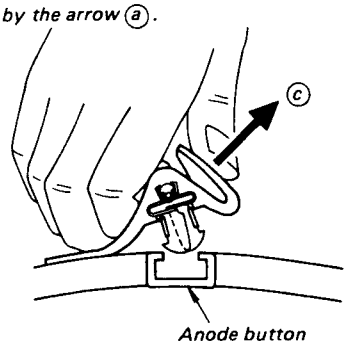


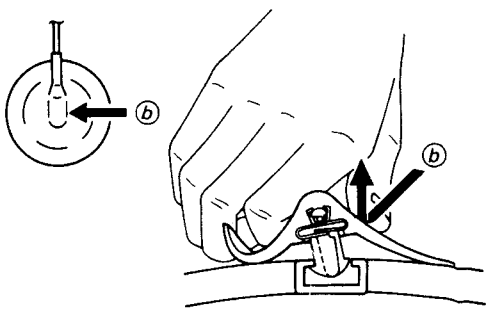
Tilt the SF terminal in the direction of the arrow ⓒ and pull out it in the direction (of 45°) indicated by the arrow.

- **Removing Procedures**



① *Turn up one side of the rubber cap in the direction indicated by the arrow ⓐ.*





② *Using a thumb, pull up the rubber cap firmly in the direction indicated by the arrow ⓑ.*

③ *When one side of the rubber cap is separated from the anode button, the anode cap can be removed by turning up the rubber cap and pulling up it in the direction of the arrow ⓒ.*

SECTION 3
SET-UP ADJUSTMENTS

The following adjustments should be made when a complete realignment is required or a new picture tube is installed.

These adjustments should be performed with rated power supply voltage unless otherwise noted.

Controls and switch should be set as follows unless otherwise noted:

◑ (picture) control ..... **maximum**

☼ (brightness) control ..... **maximum (fully clockwise)**

Perform the adjustments in order as follows:

1. **Beam Landing**
2. **Convergence**
3. **White Balance**

Note: **Test Equipment Required.**
1. Color-bar/Pattern Generator
2. Degausser

3-1. BEAM LANDING

Preparation:

- Feed in the white pattern.
- Before starting, degauss the entire screen.

1 Turn on set power supply and receive an all-white signal.
2 Evenly degauss the entire screen.
3 Loosen the deflection yoke mounting screw, and set the purity control to the center as shown in Figure 3-1.
4 Set BKG VR Ⓡ to maximum and set Ⓑ and Ⓖ to minimum.
5 Move the deflection yoke back, and adjust the purity control so that Ⓡ is in the center and Ⓖ and Ⓑ are at the sides, evenly. (Figure 3-2.)
6 Move the deflection yoke forward so that the entire screen is red.
* If the deflection yoke is pushed all the way to the CRT then moved slightly back, landing adjustment is easier.
7 Substitute Ⓖ, then Ⓑ for Ⓡ in step 4 and check landing.
8 Rotate Ⓡ, Ⓖ and Ⓑ once each and check landing.
9 When landing is not right, adjust the purity control and use magnets as shown in Figure 3-3, then repeat steps 7 and 8.
10 When a magnet is used, be sure to perform step 2, and tighten deflection yoke mounting screw loosely.

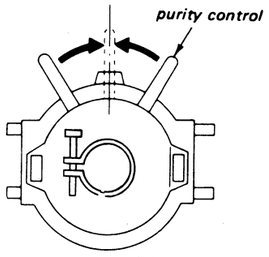


Fig. 3-1

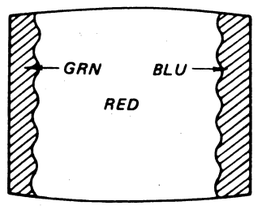
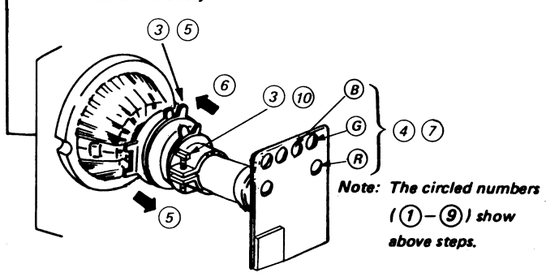


Fig. 3-2



C Board

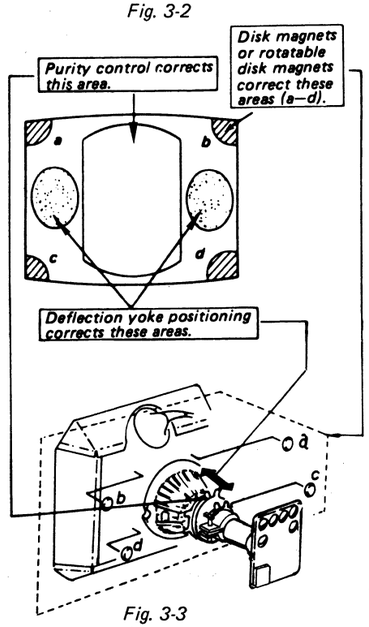


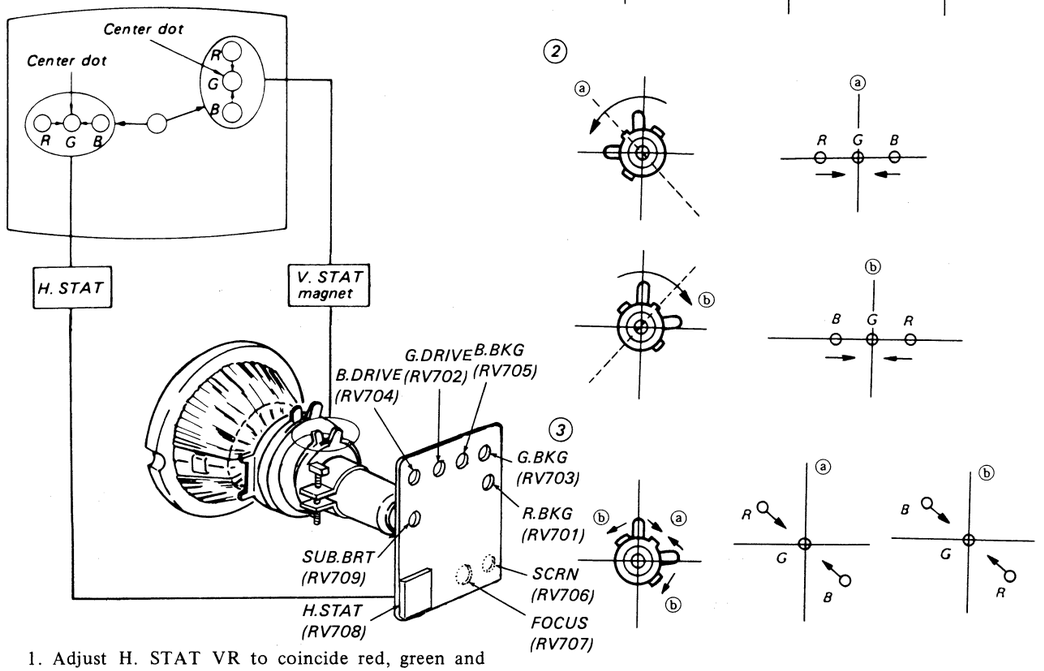
Fig. 3-3

3-2. CONVERGENCE

Preparation:

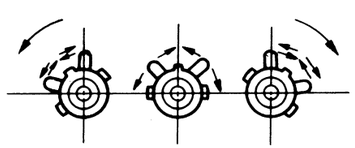
- Before starting this adjustment, perform FOCUS. H. SIZE and V. SIZE adjustments.
- Set BRIGHT control to minimam and PICTURE control mechanical center.
- Feed in a dot pattern.

(1) **Horizontal and Vertical Static Convergence**



1. Adjust H. STAT VR to coincide red, green and blue dots on the center of screen (Horizontal movement)
2. Adjust V. STAT magnet to coincide red, green and blue dots on the center of screen (Vertical movement)
3. If the red, green and blue dots do not coincide on the center of screen with H. STAT VR, perform horizontal convergence adjustment using H. STAT VR and V. STAT magnet as shown below. (In this case, H. STAT VR and V. STAT magnet effect each other.)

- Tilt the V. STAT magnet and adjust static convergence to open or close the V. STAT magnet.



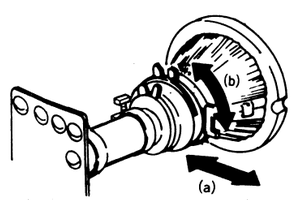
4. When the V. STAT magnet is moved in the direction of aroow ⓐ and ⓑ, Red, Green and Blue dots move as shown below.

If blue dot does not coincide with red and green dots, perform following steps.

Move BMC magnet (a) to correct insufficient H. static convergence.

Rotate BMC magnet (b) to correct insufficient V. static convergence.

In either case, repeat Beam Landing Adjustment.

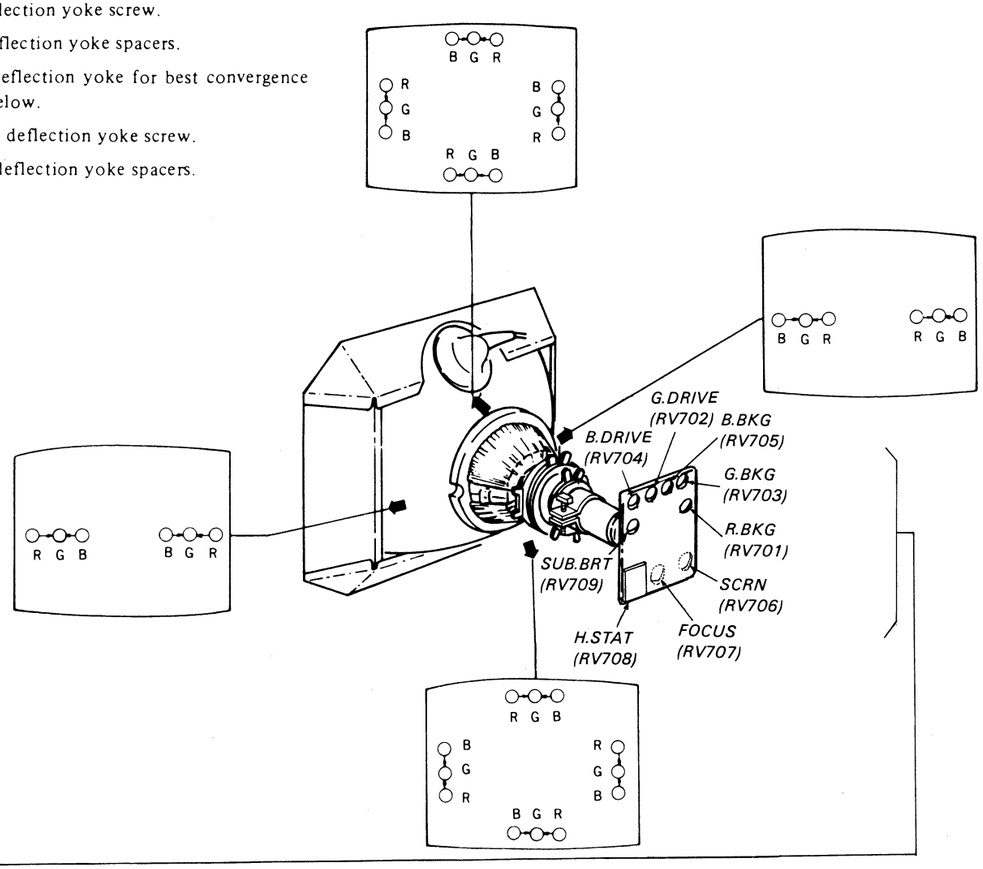


(2) Dynamic Convergence Adjustment

Preparation:

- Before starting, perform Horizontal and Vertical Static Convergence Adjustment.

1. Loosen deflection yoke screw.
2. Remove deflection yoke spacers.
3. Move the deflection yoke for best convergence as shown below.
4. Tighten the deflection yoke screw.
5. Install the deflection yoke spacers.



3-3. WHITE BALANCE

[SCREEN (G_2)]

1. Input a dots pattern.
2. Set the PICTURE control at minimum and turn the BRIGHT control fully counterclockwise.
3. Confirm that BKG voltage is less than 160V dc when turning RV701 (R.BKG), RV703 (G.BKG) and RV705 (B.BKG).
4. Note the color which becomes visible first when turning RV706.

[WHITE BALANCE (Cut off)]

1. Input a all white signal.
2. Set the PICTURE control to minimum and turn the BRIGHT control mechanical center.
3. Turn RV704 (B.DRIVE) and RV702 (G.DRIVE) fully clockwise.
4. Set RV701 (R.BKG), RV703 (G.BKG) and RV705 (B.BKG) to minimum.
5. Turn RV709 (SUB BRT) slowly to obtain a faintly visible cross-hatch.
   Note the color that first becomes visible by turning RV709.
   Do not turn a BKG control for this color.
6. Adjust the other two BKG controls for best white balance (neutral gray) of the faint cross-hatch.
7. Set the PICTURE control fully clockwise.
   Observe the screen and adjust the DRIVE controls for best white balance.
8. Repeat steps 1, through 7.

SECTION 4
CIRCUIT ADJUSTMENTS

Note: (1) TEST EQUIPMENT REQUIRED

1. Oscilloscope
2. Digital multimeter
3. Color-bar/pattern generator
4. Variable auto-transformer
5. Isolation transformer
6. Regulated-dc power supply

(2) INPUT SIGNAL

When making these adjustments, supply a color-bar or an off-air signal.

(3) CONTROL SETTING

Controls and switches should be set as follows when making checks and adjustments unless otherwise noted.

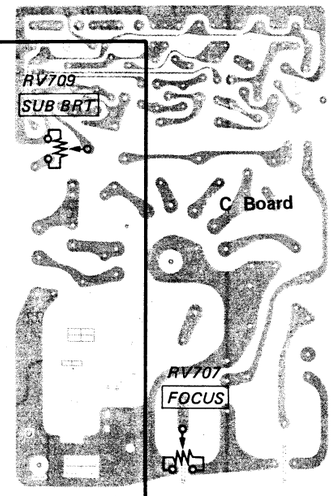
PICTURE control, COLOR control } initial setting
V. HOLD control ..... set for stable picture
BRIGHT control . . . . . set for best picture

(4) These adjustments should be performed with the rated power supply voltage unless otherwise noted.

4-1. C BOARD ADJUSTMENTS

FOCUS

Adjust RV707 for best Focus.



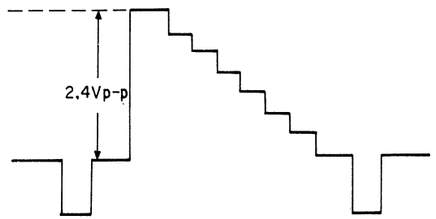
SUB BRT

① Receive a broadcast.
② Set the PICTURE control at minimum and turn the BRIGHT knob for optimum picture.
③ Adjust RV709 for optimum brightness.
④ Set the PICTURE button for best picture.
⑤ Receive each channel and check that there are no extremes of brightness.

4-2. A BOARD ADJUSTMENTS

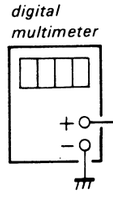
SUB PICTURE

1. Feed in a color-bar signal.
   - PIC VR ..... MAX
   - BRT VR ..... center position
   - COL VR ..... MIN
   - HUE VR ..... center position
2. Connect an oscilloscope to the pin (17) of IC301. Turn RV305 and adjust to 2.4 Vp-p.



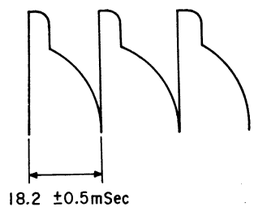
V.VOLTAGE AT CENTER TAP ADJUSTMENT (V.VIAS)

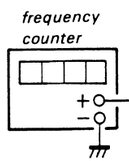
1. Feed in a monoscope signal. PICTURE control VR center position.
2. Adjust RV504 so that voltage of V.deflection yoke connector (granded side) is 12.0 ±0.2 Vdc.



V.FREQUENCY

1. No signal input.
2. Connect frequency counter across pin (2) of IC501 and ground.
3. Adjust RV502 for 55±0.5 Hz on the frequency counter.

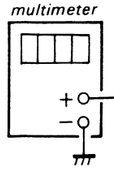




H.FREQUENCY

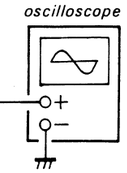
- V.CENT SW (S501) ..... center position
- H.CENT ..... center position
- V.SIZE (RV503) ..... mechanical center

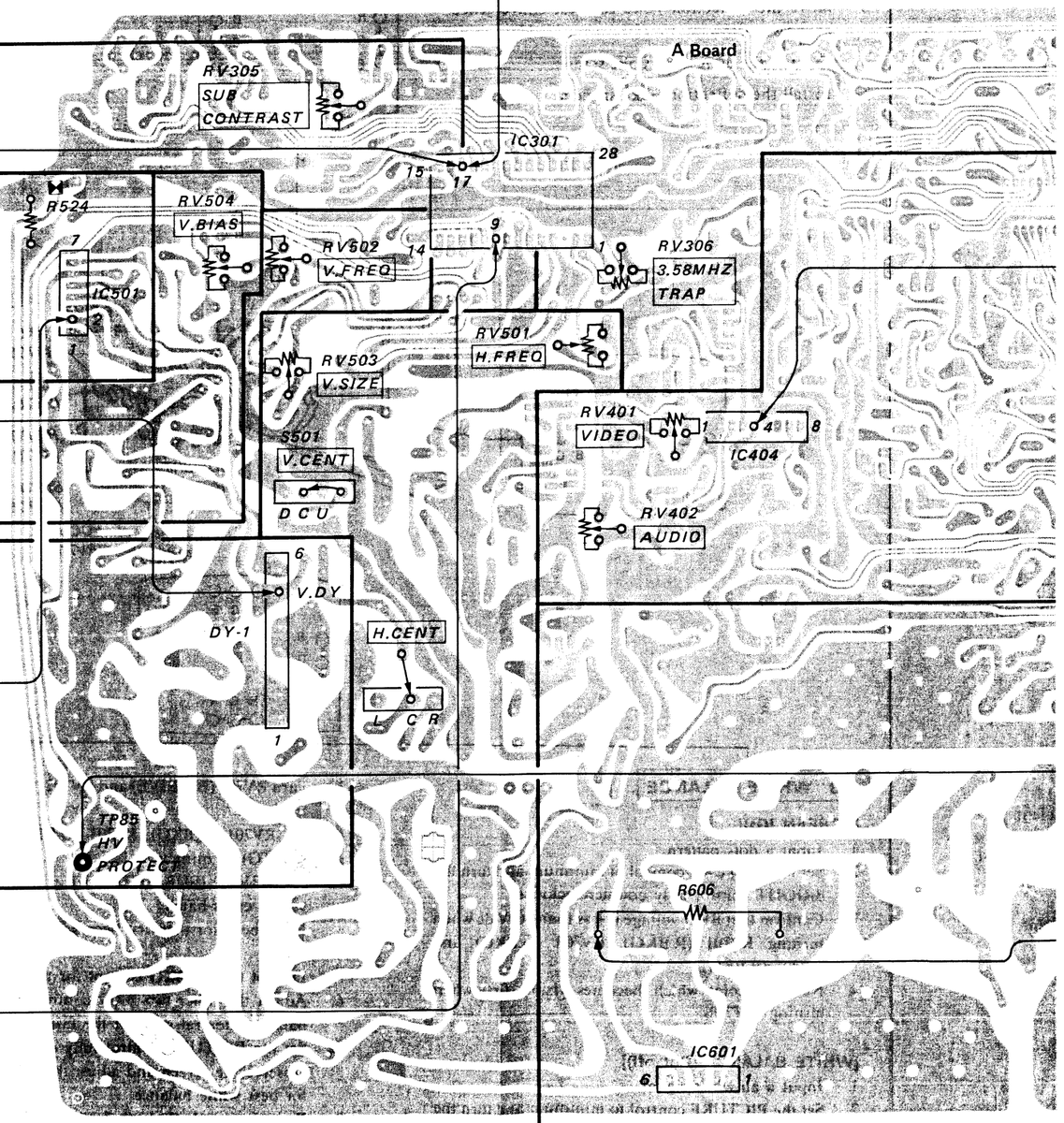
1. Feed in a monoscope signal.
2. Adjust RV501 so that voltage on pin (9) of IC301 is 3.2±0.1 Vdc.

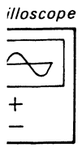


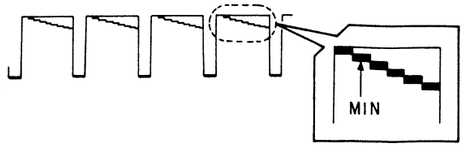
3.58 MHz TRAP

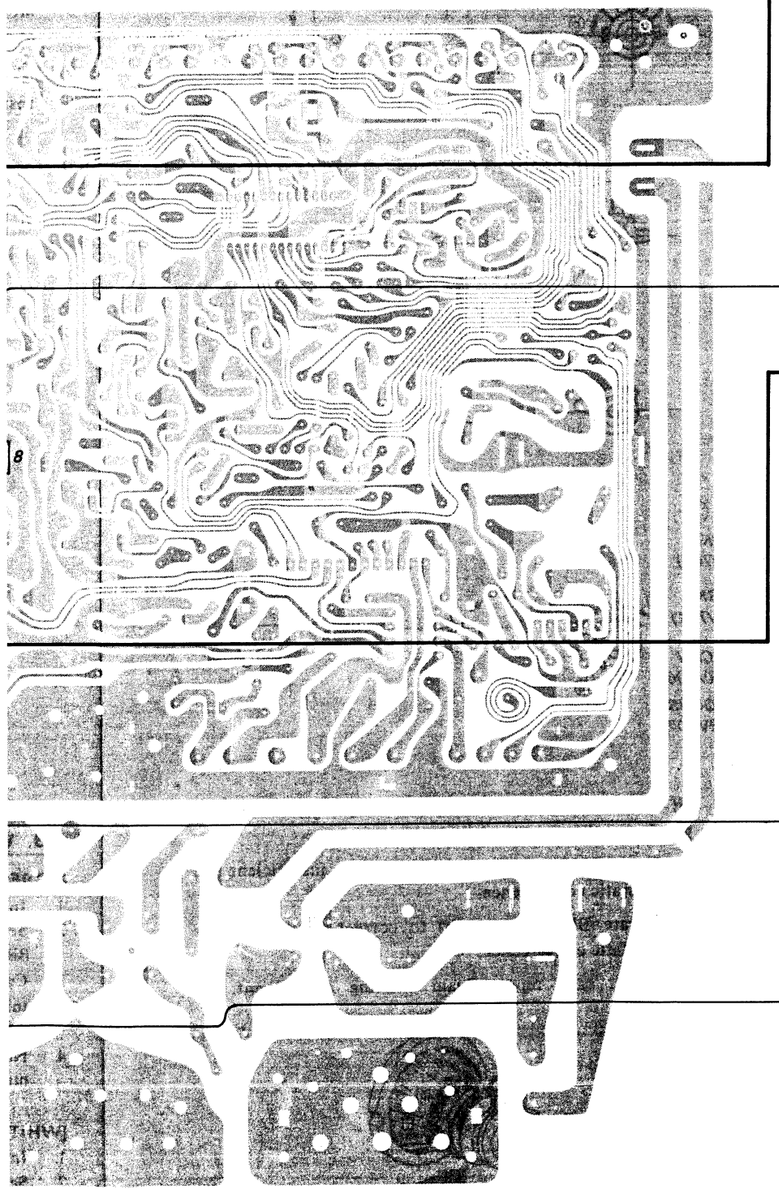
1. Feed in a color-bar signal
   PIC VR ... MAX, BRT VR ... center position
   COL VR ... MIN, HUR VR ... center position
2. Connect an oscilloscope to the pin (17) of IC301.
3. Adjust by RV306 so that chroma-components become minimum.

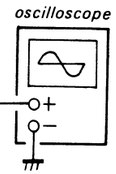








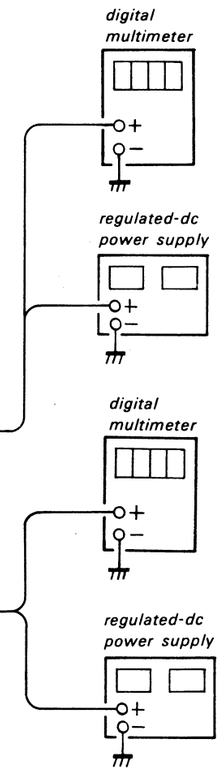




AV LEVEL ADJUSTMENT

1. *Connect an oscilloscope to the DET OUT (TP-12).*
2. *Input a color-bar-signal to RF and VIDEO IN.*
   Input signal
   RF: color-bar 87.5% TV modulation
   VIDEO: color-bar 1 Vp-p 75Ω
3. *Turn the RF/VIDEO select switch ON or OFF and adjust RV401 so that the signal levels of RF and VIDEO are same.*
4. *Connect an oscilloscope to the pin (4) of IC404.*
5. *Input signal to RF and AUDIO IN.*
   Input signal
   RF: dot signal. AUDIO 400 Hz (100% modulation)
   AUDIO: 400 Hz −5.62 dBs (0.408 Vrms)
6. *Turn the RF/VIDEO select switch ON or OFF and adjust RV402 so that the signal levels of RF and VIDEO are same.*

4-3. SAFETY RELATED ADJUSTMENT



⋈ R524 ADJUSTMENT (HOLD DOWN)

When replacing the following components (marked with ◪ on the schematic diagram), perform the adjustment as follows.

R521, R522, R523, R524, R530, R534, C307, C524, D502, D512, T503, IC301

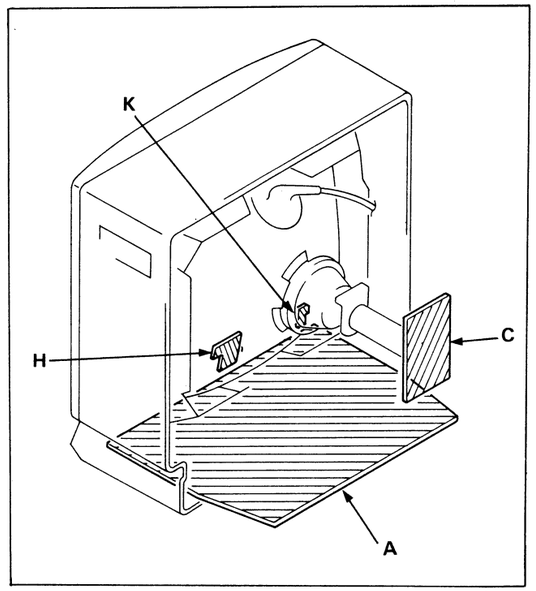
1. *Receive the dot signal*
   PICTURE VR . . . . . MIN
   BRIGHT VR . . . . . MIN
2. *+B voltage check*
   Confirm that the +B voltage (135V Line) is less than 136.2 Vdc during input of 130 $^{+2.0}_{-0}$ Vac.
3. *Protector voltage check*
   Confirm that a voltage of 20.0 $^{+1.3}_{-1.7}$ Vdc appears between TP85 and ground during input of 120 $^{+1.0}_{-0}$ Vac.
4. *Operation check*
   Confirm that the hold-down circuit operates (the raster diss apears) by adding 22.75 $^{+0}_{-0.05}$ Vdc between TP85 and ground.
5. *Receive the dot signal.*
6. *Short IC601 pins (3) and (4).*
7. *Input of 120 $^{+1.0}_{-0}$ Vac.*
8. *Error operation check.*
   Confirm that, applying 139±0.5Vdc to +B voltage (135V Line), the hold-down circuit does not operate when changing the channel.

CHECK AFTER IC601 REPLACEMENT

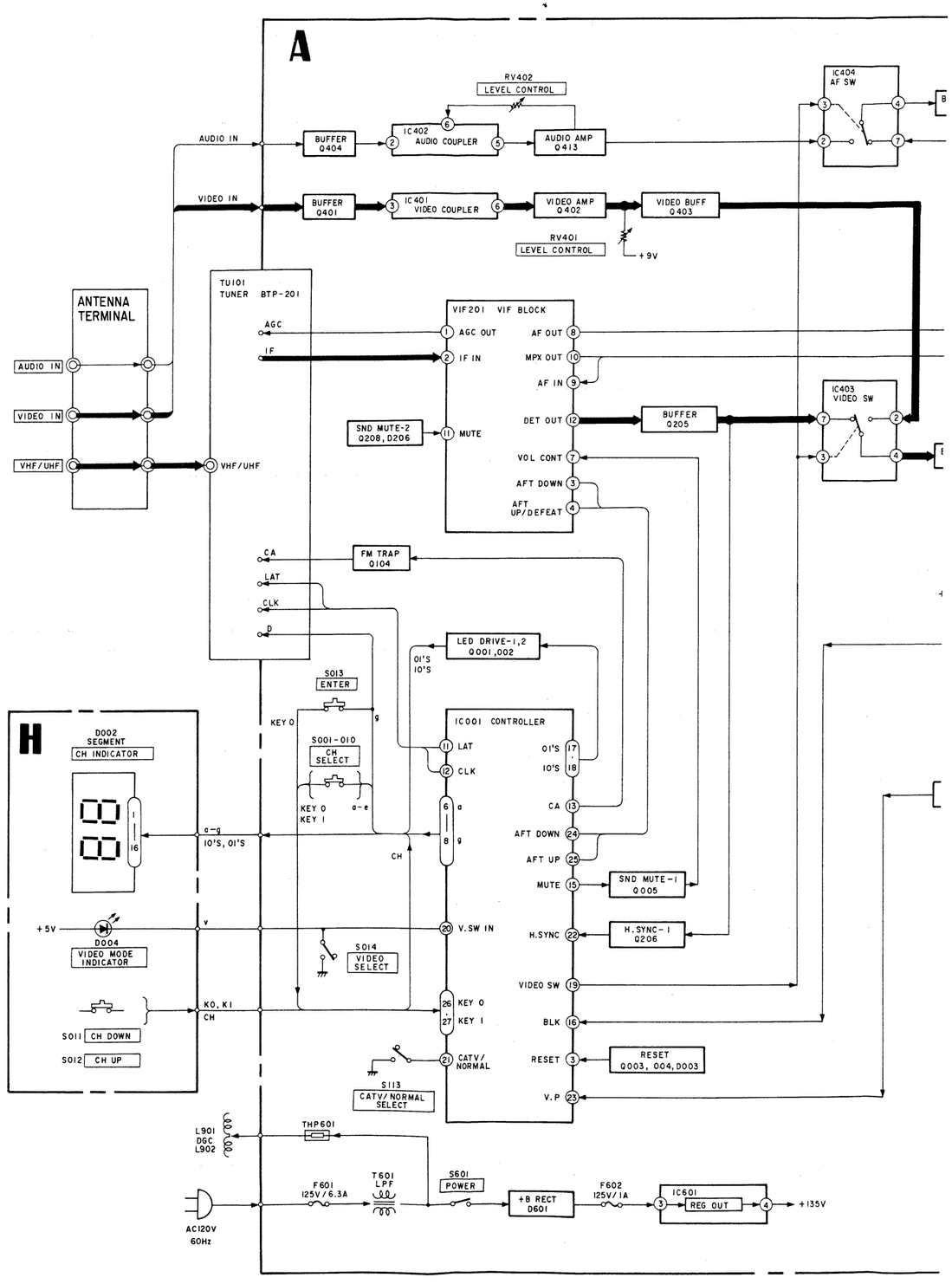
1. *Supply 130 $^{+2.0}_{-0}$ Vac to with variable auto-transformer.*
2. *Receive the dot signal.*
3. *PICTURE VR . . . . . MIN*
   BRIGHT VR . . . . . MIN
4. *Confirm that the +B voltage (135V Line) is less than 136.2 Vdc.*
5. *If step 4 is not satisfied, replace IC601 in A board and repeat above steps.*

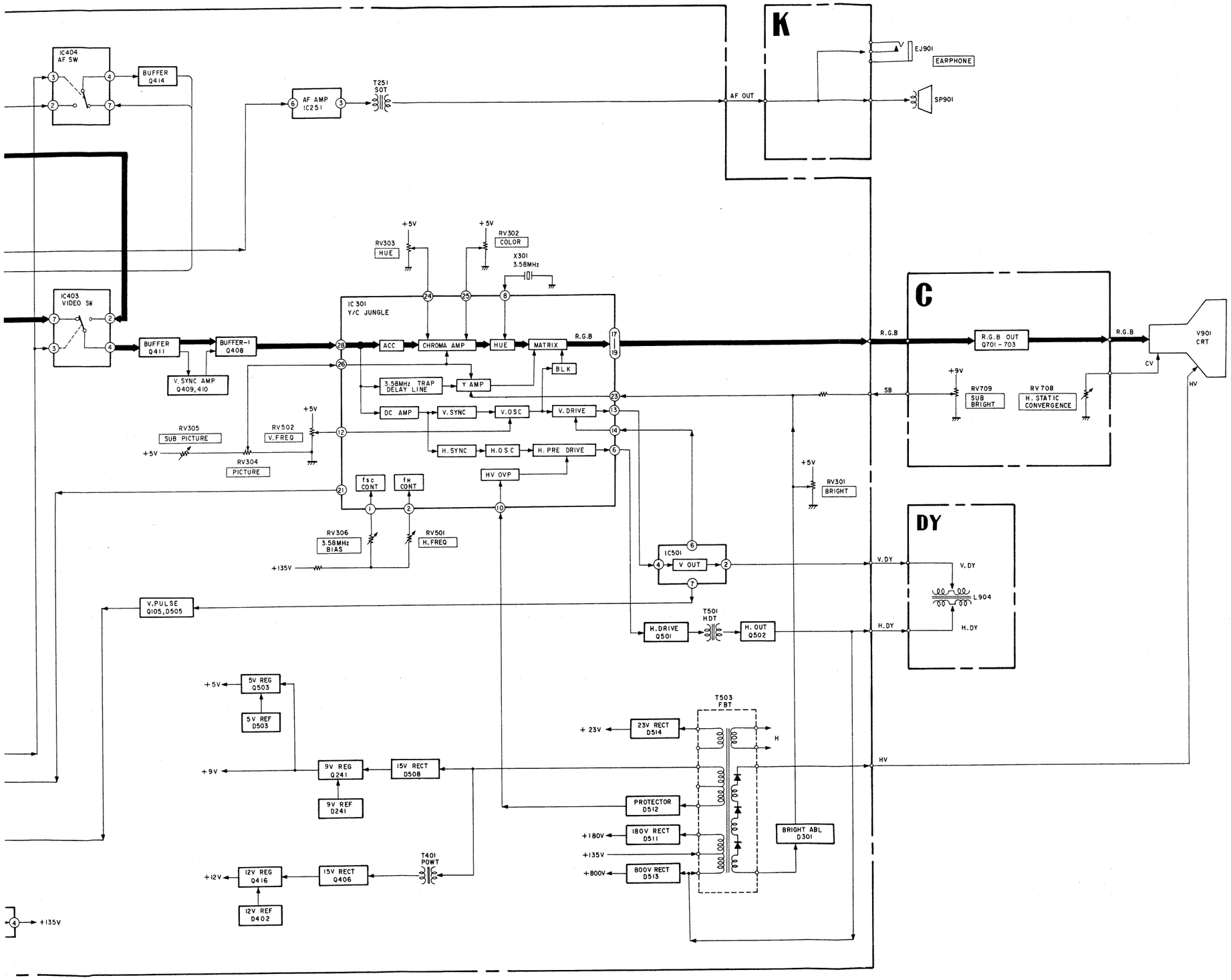
SECTION 5
DIAGRAMS

5-1. CIRCUIT BOARDS LOCATION



5-2. BLOCK DIAGRAM




K
EJ901
EARPHONE
SP901
AF OUT
IC404
AF SW
BUFFER
Q414
AF AMP
IC251
T251
SOT
IC403
VIDEO SW
BUFFER
Q411
BUFFER-I
Q408
V. SYNC AMP
Q409, 410
IC301
Y/C JUNGLE
RV303
HUE
RV302
COLOR
X301
3.58MHz
ACC
CHROMA AMP
HUE
MATRIX
R.G.B
BLK
3.58MHz TRAP
DELAY LINE
Y AMP
DC AMP
V. SYNC
V. OSC
V. DRIVE
H. SYNC
H. OSC
H. PRE DRIVE
HV OVP
RV305
SUB PICTURE
RV502
V. FREQ
RV304
PICTURE
fsc
CONT
fH
CONT
RV306
3.58MHz
BIAS
RV501
H. FREQ
+135V
+5V
+9V
C
R.G.B
R.G.B OUT
Q701 ~ 703
V901
CRT
CV
HV
SB
RV709
SUB
BRIGHT
RV708
H. STATIC
CONVERGENCE
RV301
BRIGHT
DY
V. DY
L904
H. DY
IC501
V OUT
V.PULSE
Q105, D505
T501
HDT
H. DRIVE
Q501
H. OUT
Q502
H. DY
T503
FBT
23V RECT
D514
H
PROTECTOR
D512
180V RECT
D511
800V RECT
D513
BRIGHT ABL
D301
5V REG
Q503
5V REF
D503
9V REG
Q241
9V REF
D241
15V RECT
D508
12V REG
Q416
12V REF
D402
15V RECT
Q406
T401
POWT
+23V
+180V
+12V

5-3. SCHEMATIC DIAGRAMS

Note: The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

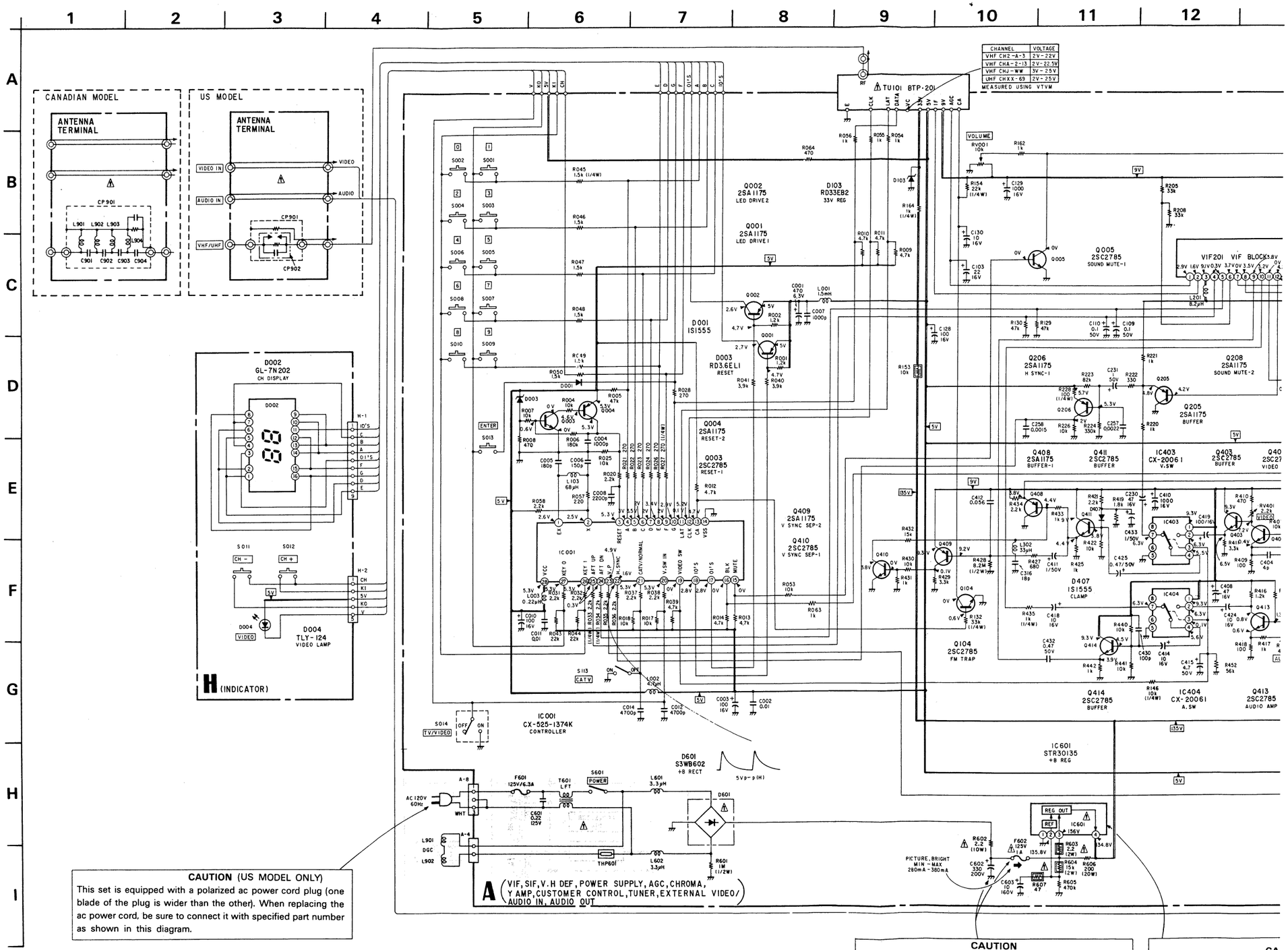
Note: Les composants identifiés par une trame et par une marque ⚠ sont d'une importance critique pour la sécurité. Ne les remplacer que par des pièces de numéro spécifié.

Note:

- All capacitors are in μF unless otherwise noted. pF: μμF 50 WV or less are not indicated except for electrolytics.
- All resistors are in ohms, 1/6 W unless otherwise noted. K: 1000 Ω, M: 1000 kΩ.
- ▭ : nonflammable resistor.
- △ : internal component.
- ▭ : panel designation.
- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.
- The components identified by ⧓ in this manual have been carefully factory-selected for each set in order to satisfy regulations regarding X-ray radiation. Should replacement be required, replace only with the value originally used.
- When replacing components identified by ◪, make the necessary adjustments indicated. If results do not meet the specified value, change the component identified by ⧓ and repeat the adjustment until the specified value is achieved. (Refer to R524 adjustment on page 15.)
- When replacing the part in below table, be sure to perform the related adjustment.

Part replaced (◪)	Adjustment (⧓)
C307,C524,D502, D512,IC301,R521, R522,R523,R524, R530,R534,T503	R524 adjustment

- Voltages are dc with respect to ground unless otherwise noted.
- Readings are taken with a 10 MΩ digital multimeter.
- Readings are taken with a color-bar signal input.
- ——— : B + bus.
- - - - : B – bus.
- Voltage variations may be noted due to normal production tolerances.
- ▭ : adjustment for repair.
- ✕ : Can not be measured.



CAUTION (US MODEL ONLY)
This set is equipped with a polarized ac power cord plug (one blade of the plug is wider than the other). When replacing the ac power cord, be sure to connect it with specified part number as shown in this diagram.

CAUTION
When taking a broken fuse (F602) off, discharge across C602 to avoid shock hazard.

CA
When replacing IC601, be su
value. Refer to the Safety A

CAUTION
Be sure to connect the connector C-1 for safety.

K (EARPHONE JACK)

EJ901 EARPHONE — SP901

TP98 9V — VIF201 VIF BLOCK — L201 8.2μH — 2.4Vp-p(H)

Q241 2SD880 9V REG — D241 RD10EN2 9V REF

Q208 2SA1175 SOUND MUTE-2 — Q205 2SA1175 BUFFER — D206 1S1555 SOUND MUTE

Q503 2SD774 5V REG — Q503 — D503 RD5.6EN3 5V REF

IC403 CX-20061 V.SW — Q403 2SC2785 BUFFER — Q402 2SC2785 VIDEO AMP — IC401 TLP551 VIDEO COUPLER

IC251 BX-1357 AF AMP — IC251

Q416 2SD774 5V REG — D402 RD13EN1 12V REF — D405 1S1555 TH.COMP

IC404 CX-20061 A.SW — Q413 2SC2785 AUDIO AMP — IC402 TLP531 AUDIO — Q401 2SC2785 DRIVE — Q404 2SC2785 DRIVE

Q105 2SC2785 V PULSE

AUDIO — A-6 — VIDEO

D502 RD5.6EBZ7S HOLD DOWN REF

IC301 CX-20192 Y/C JUNGLE — ISC CONTROL, I²C CONTROL, AFC DET, H.OSC, H-PRE-DRIVE, HV PROTECTION, V.OSC, V.DRIVE, DC AMP, H.SYNC, V.SYNC, BURST FLAG, BLANKING, APC DET, 3.58MHz OSC, ACC AMP, TOT, CHROMA AMP COLOR CONTROL, KILLER, HUE CONTROL, ACC DET, CHROMA, WINDOW, 3.58MHz TRAP DELAY LINE, SHARP CONTROL, PICTURE CONTROL, BLACK LEVEL, BRIGHT CONTROL, VIDEO MUTE, MATRIX

D302 RD5.6EN2 5V REG — D301 S1B01-02 BRT-ABL — D504 GP08D — D513 RGP01-17 800V RECT — D508 V19C 15V RECT

IC501 LA7830 V OUT — PUMP UP, PULSE WIDTH — V CENT, H CENT, LEFT, RIGHT, CENTER

D501 GP08D V-BOOST — D406 S1B01-04 15V RECT

Q501 2SC2688 H DRIVE — Q502 2SD1649 H OUT

D512 V19CS PROTECTOR — D514 V19E 23V RECT — D511 RGP10G 180V RECT

TP5 5V — TP12 — TP92 15V — TP82 V.OUT — TP84 H.OUT — TP96 25V — TP85 HV PROTECT — TP95 180V

A-2 E, SB, B, G, R, 9V — A-3 800V, 180V, E — A-7 H1, H2, HV

C (R.G.B OUT) — V901 A34JBU10X PICTURE TUBE — K8 G2 KG H CV KR G1 G4 HV — H1 H2 C-2 C-1 C-4 C-3

FOCUS MIN-MAX 0V-906V — SCREEN MIN-MAX 356V-991V — RV707 FOCUS — RV706 SCREEN — RV708 H.STAT

Q701 2SC2611 R OUT — Q702 2SC2611 G OUT — Q703 2SC2611 B OUT

SUB BRT — G.DRIVE — B.DRIVE — R.BKG — G.BKG — B.BKG

DY — V.DY, V.DY, H.DY, H.DY — V, H — L904

CAUTION
When replacing IC601, be sure to check the +B line voltage value. Refer to the Safety Adjustment Section.

☒:See Page 15.

5-4. PRINTED WIRING BOARDS
— Conductor Side —

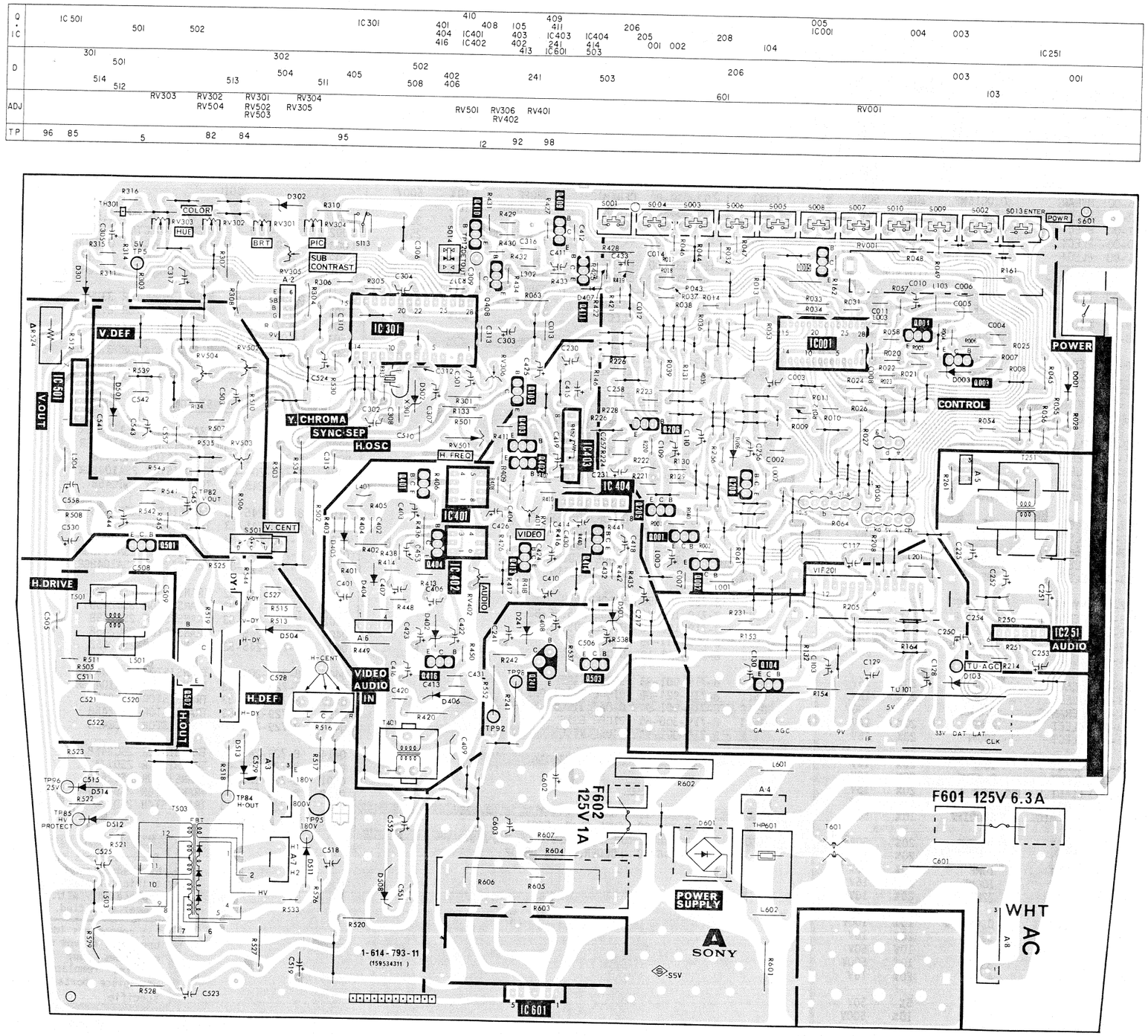
A [VIF, SIF, V.H DEF, POWER SUPPLY, AGC, CHROMA, Y AMP, CUSTOMER CONTROL, TUNER, EXTERNAL VIDEO/AUDIO IN, AUDIO OUT]

C [RGB OUT]

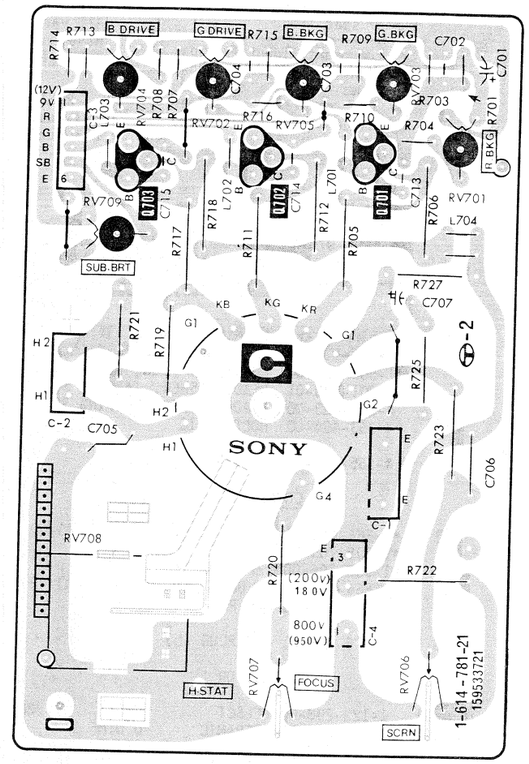
H [INDICATOR]

K [EARPHONE]

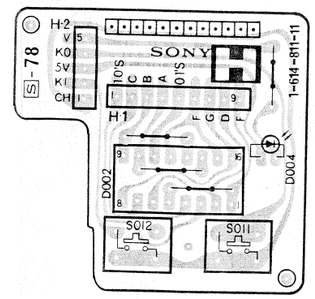
— A Board —



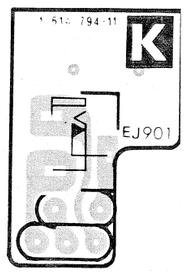
— C Board —



— H Board —

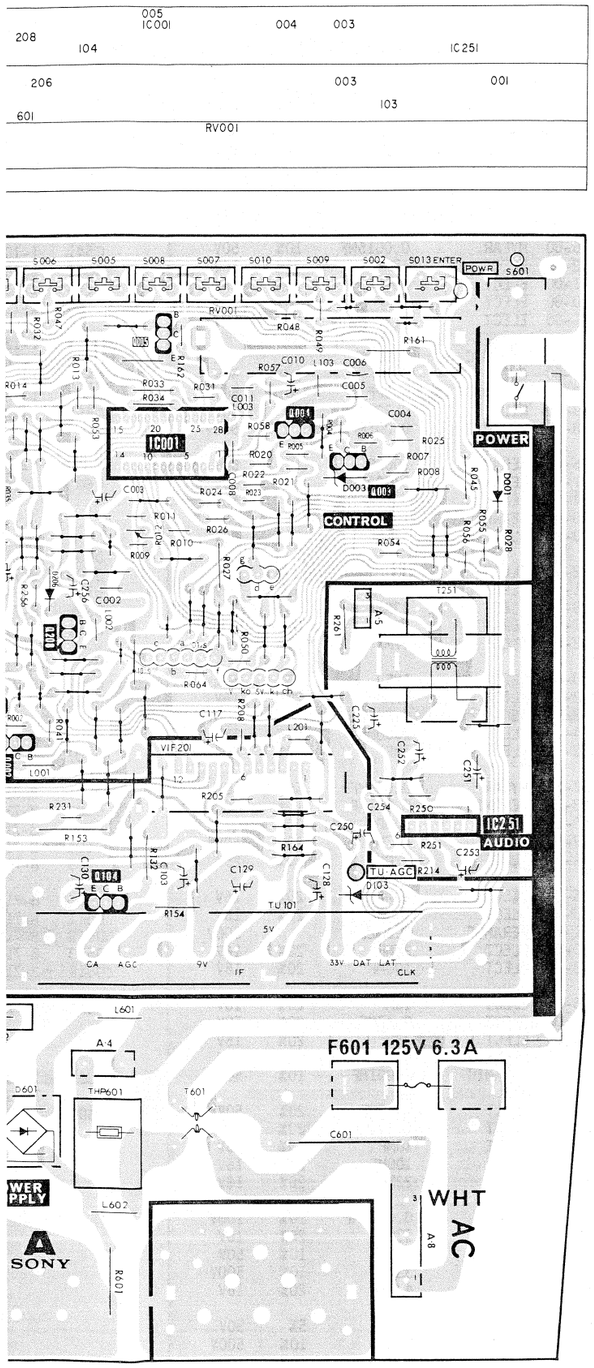


— K Board —

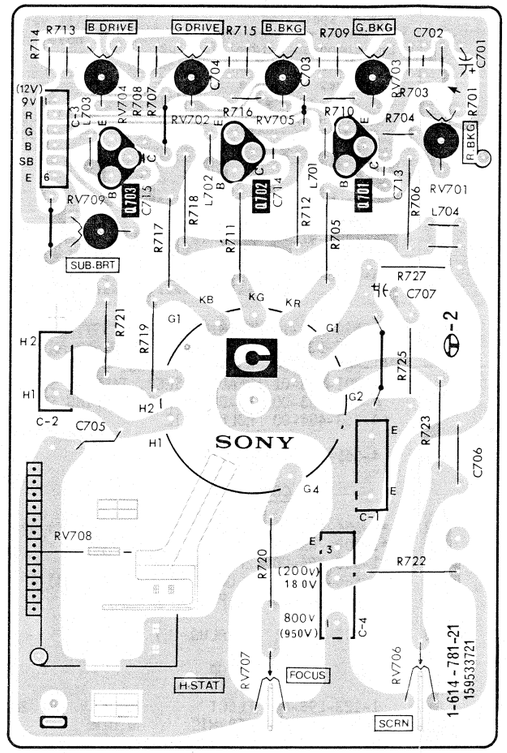


C [RGB OUT] H [INDICATOR] K [EARPHONE]

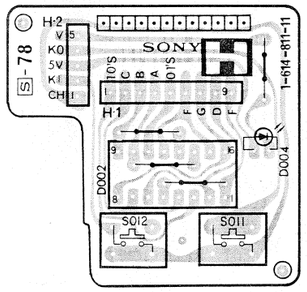
8 9 10 11 12 13 14 15 16 17



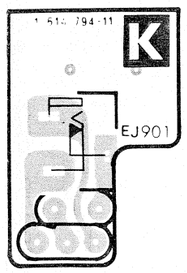
— C Board —



— H Board —



— K Board —



5-5. SEMICONDUCTORS

BX-1357

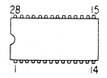
CX20061

2SA933S
2SC1740S

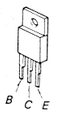
2SD774

GL-7N202

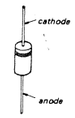
CX20192
CX525-1374K



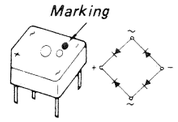
2SC1826
2SD1406
2SD313HP
2SD880



10E2
ES1F
GP08D
RGP01-17
RGP10G

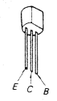


S3WB60Z



LA7830

2SC2230A
2SC2610BK
2SD789



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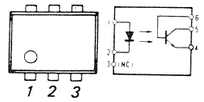

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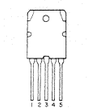
RD5.6EBZ7S
RD5.6EN2

STR30135



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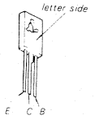

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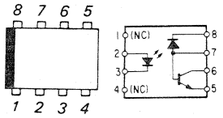

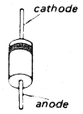

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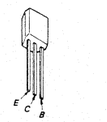

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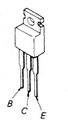

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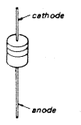

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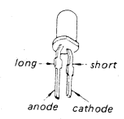

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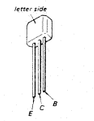

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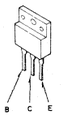

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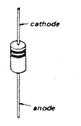

V06C
V19C
V19CS
V19E